

REMARKS

The following remarks are being submitted as a full and complete response to the Office Action dated May 29, 2008. In view of the amendments and the following remarks, the Examiner is respectfully requested to give due reconsideration to all outstanding rejections and/or objections, that they be withdrawn, and to indicate the allowability of the claims, and to pass this case to issue.

Status of the Claims

Claims 1-12 are under consideration in this application. Claims 1 and 3 are being amended to correct formal errors and to more particularly point out and distinctly claim the subject invention. New claims 5-12 are being added, and claims 8-12 mirror claims 2-6. All the amendments to the claims are supported by the specification. Applicants hereby submit that no new matter is being introduced into the application through the submission of this response.

Formality Rejection

The Title of the Invention and the specification were objected to for informalities. Since the claims are being amended as suggested or required by the Examiner, the withdrawal of the outstanding informality rejection is in order, and is therefore respectfully solicited.

Prior Art Rejection

Claims 1-2 and 4 were rejected under 35 U.S.C. §103(a) as being unpatentable over Applicants' admission of prior art (AAPA), and claim 3 was rejected over AAPA in view of Ito et al. (US Pub. No. 2002/0011172; US 6,470,783). These rejections have been carefully considered, but are most respectfully traversed in view of the claims currently on file, as more fully discussed below.

A blasting method of blasting an explosive device at least containing an explosive and a chemical agent and being placed in a sealed pressure vessel, comprises: evacuating the pressure vessel into a reduced-pressure or vacuum state; feeding and enclosing, before blasting, an amount of oxygen in the evacuated pressure vessel ([0042]; [0012]) which is equal to or more than an amount sufficient (1) either to provide a positive oxygen balance in the pressure vessel for blasting (claim 1; [0011]) or to convert the explosive and the chemical

agent into gases by blasting (claim 7), and (2) to provide the pressure in the pressure vessel after blasting as lower than a pressure outside the pressure vessel ([0044]; [0047]); and blasting the explosive device therein. Claim 1 recites “positive oxygen balance in the pressure vessel,” while claim 7 directly defines the circumstances without using the term “oxygen balance.”

Claim 3 recites that part or all of the particular amount of oxygen is supplied from an alkali metal peroxide compound or an alkali-earth metal peroxide compound ([0012]; [0019]). Claim 5 recites a step of cleaning the pressure vessel with a decontaminating agent after the blasting step ([0007]), while keeping the pressure in the blasting chamber negative ([0044]).

By making the oxygen balance of the entire explosive device containing the explosive agent positive (before blasting), the present invention converts the carbon in the explosive device into carbon dioxide or carbon monoxide gas and prevent generation of soot in the pressure vessel after blasting, and consequently, to make decontamination of the pressure vessel easier and improve the efficiency of blasting operation. In addition, the combustion period of the chemical agent during blasting is elongated, because there is oxygen in an amount sufficient for combustion of the explosive in the pressure vessel before blasting, and the oxygen is consumed gradually only in an amount needed for combustion. On the other hand, the pressure inside the pressure vessel is kept lower (negative) than atmospheric pressure after blasting to prevent leakage of the chemical agent from the pressure vessel ([0016]; Examples 1-2).

Applicants respectfully contend that none of the cited prior art references teach or suggest “feeding and enclosing, before blasting, an amount of oxygen in the evacuated pressure vessel which is equal to or more than an amount sufficient (1) either to provide a positive oxygen balance in the pressure vessel for blasting or to convert the explosive and the chemical agent into gases by blasting, and (2) to provide the pressure in the pressure vessel after blasting as lower than a pressure outside the pressure vessel” as the present invention.

AAPA described in [0002] was relied by the Examiner to teach the positive pressure feature of the invention (p. 4 , 1st paragraph of the outstanding Office Action). However, Applicants respectfully contend that [0002] merely mentions weapons to be explored in an open space and under *normal atmosphere*, rather than being placed in a sealed pressure vessel and under a *positive oxygen balance* for blasting as in the present invention. AAPA’s weapon may contain negative pressure within the bomb shell, but not outside of the bomb

shell as in the pressure vessel of the present invention. In addition, AAPA adds an oxidizer inside the weapon, rather than in any pressure vessel, to change the pressure thereof.

AAPA described in [0005] only blasts a chemical weapon is in a tightly sealed pressure vessel under vacuum in order to prevent leakage of a chemical agent contained in the chemical weapon, but not under any positive oxygen balance for blasting as the present invention.

AAPA described in [0007] blasts a military explosive having a negative oxygen balance in a pressure vessel that is evacuated into a substantially vacuum state; however, a great amount of soot is generated because of insufficient supply of oxygen. The present invention solves this problem by “feeding and enclosing an amount of oxygen in the evacuated pressure vessel thereby providing a positive oxygen balance for blasting.” This prevents generating soot during blasting and improves chemical agent decomposing efficiency.

One skilled in the art would not use the blasting method as claimed by the Applicants based on the above prior art teachings except by using Applicants' invention as a blueprint. Applicants will point out that a rejection based on hindsight knowledge of the invention at issue is improper.

Ito was relied upon by the Examiner to teach original claim 3. However, Ito only describes an alkaline solution, such as *sodium hydroxide*, which directly neutralizes a chemical agent ([0006]) by directly reacting with the chemical agent. Namely, such an alkaline compound works as a neutralizer ([0010]). In contrast, in the present invention (amended claim 3), an alkali metal peroxide compound or an alkali-earth metal peroxide compound is an oxygen supplier which supplies oxygen in the particular amount ([0019]), and then the *oxygen* neutralizes the chemical agent by reacting with the chemical agent. Therefore, even if AAPA is combined with the neutralizer of Ito, the resulting combination could not yield the oxygen supplier of the present invention.

Applicants contend that the cited references and their combination fail to teach or suggest each and every feature of the present invention as recited in independent claims 1 and 7. As such, the present invention as now claimed is distinguishable and thereby allowable over the rejections raised in the Office Action. The withdrawal of the outstanding prior art rejections is in order, and is respectfully solicited.

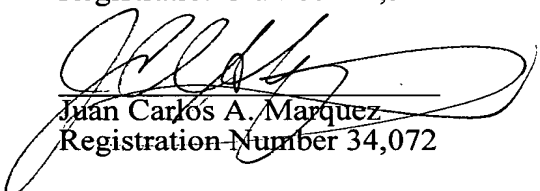
Conclusion

In view of all the above, Applicants respectfully submit that certain clear and distinct differences as discussed exist between the present invention as now claimed and the prior art references upon which the rejections in the Office Action rely. These differences are more than sufficient that the present invention as now claimed would not have been anticipated nor rendered obvious given the prior art. Rather, the present invention as a whole is distinguishable, and thereby allowable over the prior art.

Favorable reconsideration of this application as amended is respectfully solicited. Should there be any outstanding issues requiring discussion that would further the prosecution and allowance of the above-captioned application, the Examiner is invited to contact the Applicants' undersigned representative at the address and telephone number indicated below.

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